

## Salinity Measurement and Refractometer Care

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### OPERATING THE LEICA REFRACTOMETER

The Leica hand-held refractometer is automatically temperature compensated to provide accurate, direct readings of aqueous solutions at temperatures from 16 to 38°C. Maximum temperature compensation error for temperature ranges and for the instrument extremes is 0.1%. The actual error over the most frequently useful portion of the range is much less. The largest error occurs at the lowest scale readings and particularly with water samples at temperatures below 18°C.

#### Calibration

The Leica hand-held refractometer is calibrated at the factory and should not need further adjustment, but if adjustment is necessary, follow these procedures:

Take a salinity reading of Nanopure water. If the reading differs from zero by more than 0.05%, use a jeweler's screwdriver to pry through the cement prism seal, and turn the adjustment screw slightly clockwise to increase reading. Make sure the final motion is clockwise. Take another reading. (See Leica Temperature Compensated Hand-Held Refractometer Model 10419 Instruction Manual for figures). Repeat this procedure until 0 reading can be obtained with Nanopure water. Seal the access hole after calibration.

#### MEASURING SALINITY

Before and after using, the glass stage of the refractometer should be wiped clean with a damp tissue soaked with Nanopure water to remove any residue and/or salt. Hold the refractometer in a horizontal position. Lift the cover plate to expose both the prism and cover plate surfaces. Clean the cover plate using Nanopure water. Using a pipette, place a small drop of the sample on the measuring prism. Avoid touching the pipette tip to the prism surface. Close the cover plate over the measuring prism immediately to minimize evaporation. Point the refractometer toward the light source until you can see a distinct contrast between the light and dark boundary on the instrument scale. Take the reading where the dividing line crosses between the light and dark areas. To clean the prism, use a soft cloth or lens paper moistened with Nanopure water. Wipe it dry with a soft cloth

Note: If the prism or cover plate is not cleaned completely before the sample is loaded, an erroneous or fuzzy reading will result.

Note: Do not immerse the eyepiece or black focusing ring in water. Never use hot water or abrasive cleaning compounds on the external coating or prism surface. Never expose the instrument to temperatures above 66°C.